

[A POLYSILICON THIN FILM TRANSISTOR]

Abstract

A polysilicon thin film transistor having a poly-island layer, a gate, a gate insulating film, a first inter-layer dielectric and a second inter-layer dielectric. The poly-island layer includes a channel region and a doped source/drain region on each side of the channel. The gate insulating film includes a silicon oxide layer and a silicon nitride layer. The gate is positioned over the poly-island layer. The oxide layer is positioned between the gate and the poly-island layer and the nitride layer is positioned between the gate and the oxide layer. The first inter-layer dielectric covers the gate and the nitride layer and the second inter-layer dielectric covers the first inter-layer dielectric. A source/drain contact metal is embedded between the first inter-layer dielectric and the gate insulating film on each side of the gate. The source/drain contact metal is electrically connected to one of the doped source/drain region.